

Attorney Docket No.: 42P17298

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In Re Application of:

Justin K. Brask

Application No.: 10/658,225

Filed: September 8, 2003

For: METHODS AND COMPOSITIONS  
FOR SELECTIVELY ETCHING METAL  
FILMS AND STRUCTURES

Examiner: Duda, Kathleen

Art Unit: 1795

Confirmation No: 2688

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Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

**REPLY TO EXAMINER'S ANSWER**

Pursuant to 37 C.F.R. § 41.41, and in response to the Examiner's Answer dated October 31, 2008, Applicant submits the attached Reply Brief.

I hereby certify that this correspondence is being deposited via EFS Web on the date below:

December 31, 2008

Date of Deposit

/Gigi Hoover/  
Gigi Hoover

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**I. REAL PARTY IN INTEREST**

The real party in interest and assignee of record is Intel Corporation, a corporation of Delaware having a principle place of business at 2200 Mission College Blvd., Santa Clara, CA, 95052, United States of America.

**II. RELATED APPEALS AND INTERFERENCES**

To the best of Appellant's knowledge, there are no appeals or interferences related to the present appeal that will directly affect, be directly affected by, or have a bearing on the Board's decision in the instant appeal.

**III. STATUS OF CLAIMS**

Claims 13, 14, 16-18, 20-25 and 32-40 are pending in the present application.

Claims 1-12, 15, 19, and 26-31 have been canceled.

No Claims have been allowed.

Claims 13, 14, 16-18, 20-25 and 32-40 have been finally rejected under 35 U.S.C. 102(e) and 35 U.S.C. 103(a) in the Final Office Action mailed April 1, 2008.

Claims 13, 14, 16-18, 20-25 and 32-40 are the subject of this appeal. A copy of Claims 13, 14, 16-18, 20-25 and 32-40 as they stand on appeal are set forth in Appendix A.

**IV. STATUS OF AMENDMENTS**

Subsequent to the Final Office Action mailed April 1, 2008 Appellant canceled no claims.

**V. SUMMARY OF CLAIMED SUBJECT MATTER**

This section of this Appeal Brief is set forth to comply with the requirements of 37 C.F.R. 41.37(c)(1)(v) and is not intended to limit the scope of the claims in any way. Exemplary

implementations of the limitations of independent claim 13 and dependent claims 14, 16-17, 22-23 and 32 are described below.

Appellant's invention, as claimed in claims 13-14, 16-17, 22-23 and 32, is directed to a method. The method includes depositing a first metallic film and a second metallic film on a substrate. (See Appellant's specification, e.g., paragraphs 0023, 0027 and 0033, element 205 from Fig. 2, and element 405 from Fig. 4.) A layer of photoresist is deposited on at least the first metallic film. (See Appellant's specification, e.g., paragraphs 0024 and 0034, element 210 from Fig. 2, and element 410 from Fig. 4.) The photoresist is patterned such that a desired portion of the first metallic film is masked and an undesired portion of the first metallic film is exposed. (See Appellant's specification, e.g., paragraphs 0024 and 0034, element 210 from Fig. 2, and element 410 from Fig. 4.) Two or more chelating agents are selected based upon the metals contained in the first metallic film. (See Appellant's specification, e.g., paragraphs 0025, 0031 and 0035, element 215 from Fig. 2, and element 415 from Fig. 4.) The two or more chelating agents are used to remove the undesired portion of the first metallic film, wherein the two or more chelating agents do not impair the second metallic film. (See Appellant's specification, e.g., paragraphs 0025, 0031 and 0037, element 215 from Fig. 2, and element 425 from Fig. 4.)

In dependent claim 14, the method further comprises selecting a media in which to employ the two or more chelating agents based upon the metals contained in the first metallic film. (See Appellant's specification, e.g., paragraphs 0032 and 0036 and element 420 from Fig. 4.)

In dependent claim 16, the two or more chelating agents are employed in a solution at a concentration ranging from approximately 0.5 – 5 moles/liter, for each chelating agent. (See Appellant's specification, e.g., paragraph 0025.)

In dependent claim 17, which depends from claim 14, the two or more chelating agents are employed in a solution selected from the group consisting of an acidic solution, a basic solution, a solvent solution, and a de-ionized water solution. (See Appellant's specification, e.g., paragraph 0032.)

In dependent claim 22, the two or more chelating agents are used in proportion to a proportion of metals of the first metallic film. (See Appellant's specification, e.g., paragraph 0031.)

In dependent claim 23, the two or more chelating agents are specifically tailored to bind with metals in the first metallic film. (See Appellant's specification, e.g., paragraph 0035.)

In dependent claim 32, the first metallic film is an alloy comprised of at least two different metals. (See Appellant's specification, e.g., paragraph 0031 which states in part, "*the chelating agents may be used in proportion to the proportion of the respective metals of the alloy.*" Further support can be found in, e.g., paragraph 0035 which states in part, "*The chelating agents are specifically tailored to bind with the particular metal or metals of the metal film.*" One of ordinary skill in the art would have known that distinguishing language such as "*respective metals*" and "*metal or metals*" means that an alloy may be "comprised of at least two different metals," as claimed by the Appellant).

Claims 18, 20-21, 24-25 and 33-40 are directed at methods with elements similar to the elements recited in claims 13-14, 16-17, 22-23 and 32, as described above. For example, claims 34-40 recite similar elements to claims 13-14, 16-17, 22-23 and 32, respectively. However, the elements "*depositing a layer of photoresist on at least the first metallic film*" and "*patterning the photoresist such that a desired portion of the first metallic film is masked and an undesired portion of the first metallic film is exposed,*" from claim 13 are replaced with the element

*“masking the first metallic film such that a desired portion of the first metallic film is masked and an undesired portion of the first metallic film is exposed,”* in claim 34.

## **VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

Whether claims 13, 14, 16-18, 20-25 and 32-40 are unpatentable under 35 U.S.C. § 102(e) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a), as obvious over Bojkov.

## **VII. ARGUMENT**

### **Claim Rejections – 35 U.S.C. § 102(e)/103(a)**

#### **Claims 13, 14, 16-18, 20-25 and 32-40**

In the Examiner’s Answer dated October 31, 2008, the Examiner sustained the rejections from the Final Office Action dated April 1, 2008. (See Examiner’s Answer p. 7.) Accordingly, it is Appellant’s understanding that no new grounds of rejection were provided in the Examiner’s Answer. As such, Appellant maintains arguments provided in the Appeal Brief filed September 2, 2008.

## **VIII. CONCLUSION**

For at least the reasons stated above, claims 13, 14, 16-18, 20-25 and 32-40 are patentable. Appellant respectfully requests that the Board reverse the rejections of claims 13, 14, 16-18, 20-25 and 32-40 under U.S.C. § 102(e)/103(a) and direct the Examiner to enter a Notice of Allowance for claims 13, 14, 16-18, 20-25 and 32-40.

Appellant believes that no fee is required for consideration of this reply brief, as the fee of \$510.00 to cover the appeal fee for one other than a small entity as specified in 37 C.F.R. §1.17(c) was submitted with the originally filed brief. Please charge any shortages and credit any overcharges to our Deposit Account No. 02-2666.

Respectfully submitted,  
**BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN, LLP**

Date: December 31, 2008

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## VIII **CLAIMS APPENDIX**

1. – 12. (Canceled)

13. (Previously presented) A method comprising:

depositing a first metallic film and a second metallic film on a substrate;

depositing a layer of photoresist on at least the first metallic film;

patterning the photoresist such that a desired portion of the first metallic film is masked and an

undesired portion of the first metallic film is exposed;

selecting two or more chelating agents based upon the metals contained in the first metallic film;

and

using the two or more chelating agents to remove the undesired portion of the first metallic

film, wherein the two or more chelating agents do not impair the second metallic film.

14. (Previously presented) The method of claim 13 further comprising:

selecting a media in which to employ the two or more chelating agents based upon the metals

contained in the first metallic film.

15. (canceled)

16. (Previously presented) The method of claim 13 wherein the two or more chelating agents are employed in a solution at a concentration ranging from approximately 0.5 – 5 moles/liter, for each chelating agent.

17. (Previously presented) The method of claim 14 wherein the two or more chelating agents are employed in a solution selected from the group consisting of an acidic solution, a basic solution, a solvent solution, and a de-ionized water solution.

18. (Previously presented) A method comprising:

depositing a first metallic film and a second metallic film on a substrate;  
depositing a layer of photoresist on at least the first metallic film;  
patterning the photoresist such that a desired portion of the first metallic film is masked and an undesired portion of the first metallic film is exposed;  
selecting a media in which to employ two or more chelating agents based upon the metals contained in the first metallic film; and  
employing the two or more chelating agents to remove the undesired portion of the first metallic film, wherein the two or more chelating agents do not impair the second metallic film.

19. (Canceled)

20. (Previously presented) The method of claim 18 wherein the media is a liquid media selected from the group consisting of an aqueous acid media with oxidant, an aqueous acid media without oxidant, an aqueous basic media without oxidant, and a solvent media without oxidant having a pH of approximately seven.

21. (Previously presented) The method of claim 18 wherein the two or more chelating agents are employed in a solution at a concentration ranging from approximately 0.5 – 5 moles/liter, for each chelating agent.

22. (Previously presented) The method of claim 13 wherein the two or more chelating agents are used in proportion to a proportion of metals of the first metallic film.

23. (Previously presented) The method of claim 13 wherein the two or more chelating agents are specifically tailored to bind with metals in the first metallic film.

24. (Previously presented) The method of claim 18 wherein the two or more chelating agents are used in proportion to a proportion of metals of the first metallic film.

25. (Previously presented) The method of claim 18 wherein the two or more chelating agents are specifically tailored to bind with metals in the first metallic film.

26. – 31. (canceled)

32. (Previously presented) The method of claim 13 wherein said first metallic film is an alloy comprised of at least two different metals.

33. (Previously presented) The method of claim 18 wherein said first metallic film is an alloy comprised of at least two different metals.

34. (Previously presented) A method comprising:

depositing a first metallic film and a second metallic film on a substrate;  
masking the first metallic film such that a desired portion of the first metallic film is masked and an undesired portion of the first metallic film is exposed;  
selecting two or more chelating agents based upon the metals contained in the first metallic film;  
and  
using the two or more chelating agents to remove the undesired portion of the first metallic film, wherein the two or more chelating agents do not impair the second metallic film.

35. (Previously presented) The method of claim 34 further comprising:

selecting a media in which to employ the two or more chelating agents based upon the metals contained in the first metallic film.

36. (Previously presented) The method of claim 34 wherein the two or more chelating agents are employed in a solution at a concentration ranging from approximately 0.5 – 5 moles/liter, for each chelating agent.

37. (Previously presented) The method of claim 35 wherein the two or more chelating agents are employed in a solution selected from the group consisting of an acidic solution, a basic solution, a solvent solution, and a de-ionized water solution.

38. (Previously presented) The method of claim 34 wherein the two or more chelating agents are used in proportion to a proportion of metals of the first metallic film.

39. (Previously presented) The method of claim 34 wherein the two or more chelating agents are specifically tailored to bind with metals in the first metallic film.

40. (Previously presented) The method of claim 34 wherein said first metallic film is an alloy comprised of at least two different metals.

IX. **EVIDENCE APPENDIX**

None.

X. **RELATED PROCEEDINGS APPENDIX**

None.